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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,552	06/26/2003	Paul E. Keller	60005-129	7420

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EXAMINER

ANDREA, BRIAN K

ART UNIT	PAPER NUMBER
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3662

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/607,552

Applicant(s)

KELLER, PAUL E.

Examiner

Brian K Andrea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 6-9, 11-16, 19-21, 24, 25, 27, 28-35 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,859,609 to Sheen et al. (hereinafter, "Sheen"), cited on the Information Disclosure Statement.

With regard to claims 1, 8, 9, 15, 16, 21, 25, 27, 34 and 37, Sheen teaches a method comprising: irradiating a person at least partially covered with clothing (see column 2, lines 1-6); detecting electromagnetic radiation within a frequency range of about 200 MHz to about 1 THz reflected from a surface beneath the clothing in response to said irradiating (see column 4, line 15); establishing data representative of an image of the person from the electromagnetic radiation (see column 8, lines 1-8); determining a number of data sets from the data, the data sets each corresponding to a spatial frequency representation of a different portion of the image (see column 8, lines 32-37); and adaptively processing each of the data sets to identify a man-made object being carried by the person beneath the clothing (see column 9, line 30 *et seq.*).

With regard to claims 2 and 11, Sheen teaches that the determining includes performing a Fourier transform operation for each of a number of different portions of

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the data to provide a corresponding number of complex spatial frequency data representations (see column 6, line 14 to column 7, line 67).

With regard to claims 6, 13, 20 and 24, Sheen teaches that the man-made object is at least a weapon or contraband (see column 10, lines 30-32).

With regard to claims 7, 19 and 28, Sheen teaches displaying an image of at least a portion of the man-made object (see column 10, lines 30-32 and figure 11).

With regard to claims 12 and 33, Sheen teaches that the range is about 5 GHz to about 110 GHz (see column 4, line 15).

With regard to claim 14, Sheen teaches generating a number of overlapping image frames and comparing information between two or more frames in identifying an object (see column 5, lines 32-40).

With regard to claims 10 and 30, Sheen teaches a platform 41 proximate to the array to support the person and a motor to move at least one of the array and the platform relative to another of the array and the platform to perform a security scan of the person at a security checkpoint (see figure 2 – using the Sheen system at a security checkpoint is its inherent intended use).

With regard to claim 29, Sheen teaches a platform 41 proximate to the array to support the person and a motor to move at least one of the array and the platform relative to another of the array and the platform to perform a security scan of the person at a security checkpoint (see figure 2 – using the Sheen system at a security checkpoint is its inherent intended use). Further, Sheen teaches the use of two arrays, one for transmitting signals and one for receiving signals (see column 3, lines 65-67).

With regard to claim 31, Sheen teaches that the processor is operable to generate image data corresponding to a number of cylindrical images of the person (see column 9, line 25 *et seq.*).

With regard to claim 32, Sheen further teaches extracting features from the sets of spatial frequency image representation data for analysis (see figures 10, 11 – features of the imaged person are clearly extracted).

With regard to claim 35, it is inherent that Sheen teaches that the device is in the form of a processor-readable memory and the logic is in the form of a number of instructions stored in the memory because this is how computer operated systems are designed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 4, 17, 18, 22, 26 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheen in view of U.S. Patent No. 6,700,526 to Witten (hereinafter, "Witten").

With regard to claims 3 and 38, Sheen teaches that features are extracted from complex spatial frequency data. Sheen does not teach the use of a filter for extracting image features. However, Witten teaches a method and apparatus that automatically

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extracts image features from complex spatial frequency data inherently using some type of filter that is able to distinguish desired returns from the entire returned spectrum. It would have been obvious to modify Sheen with this teaching of Witten as a means for automatically detecting weapons or contraband (as desired by Sheen).

With regard to claim 4, it is not clear to the examiner what is meant by a radially invariant and angular invariant filter. However, both references (Sheen and Witten) are capable of extracting data both angularly and radially and therefore, the use of either of these types of filters for accomplishing the desired result would have been obvious in the modified Sheen system.

With regard to claims 17, 18 and 26, Sheen teaches that the determining includes performing a Fourier transform operation for each of a number of different portions of the data to provide a corresponding number of complex spatial frequency data representations (see column 6, line 14 to column 7, line 67). Further, Sheen teaches that features are extracted from complex spatial frequency data. Sheen does not teach the use of a filter for extracting image features. However, Witten teaches a method and apparatus that automatically extracts image features from complex spatial frequency data inherently using some type of filter that is able to distinguish desired returns from the entire returned spectrum. It would have been obvious to modify Sheen with this teaching of Witten as a means for automatically detecting weapons or contraband (as desired by Sheen).

With regard to claim 22, it would have been obvious for Sheen to implement, when implementing the teachings of Witten above, a feature that inhibits the displaying

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if certain criteria (presence of an object) because there would be no need to display an object if it was not present . . . the operator at a security checkpoint is only interested in being alerted when an object of interest is present!

5. Claims 5, 23, 36, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheen.

With regard to claims 5, 36 and 40, Sheen inherently teaches the use of a computer system for running the apparatus. However, Sheen does not teach that the system is adapted to perform processing with a neural network. However, the use of a neural network is quite common in the modern world and it therefore would have been obvious to send data to other parts of a network for analysis.

With regard to claims 23 and 39, Sheen does not address the need for gender-neutral representation. However, it would have been obvious to display a person in a gender-neutral representation to avoid any potential embarrassment to those being imaged.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Michiguchi teaches using a variable frequency oscillator to only receive returns from an object of interest and superimposes the returns on a video image of the person being monitored.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Andrea whose telephone number is (703) 605-4245. The examiner can normally be reached on M-F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (703) 306-4171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BKA
BKA

01 July 2004

Bernard E. Gregory
BERNARD E. GREGORY
PRIMARY EXAMINER
A.U. 3662